

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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24 December 2003 (24.12.2003)

PCT

(10) International Publication Number  
WO 03/106485 A1

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(51) International Patent Classification<sup>7</sup>: C07K 14/00,  
C12N 15/12, 15/70

(21) International Application Number: PCT/EP02/06596

(22) International Filing Date: 14 June 2002 (14.06.2002)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant and

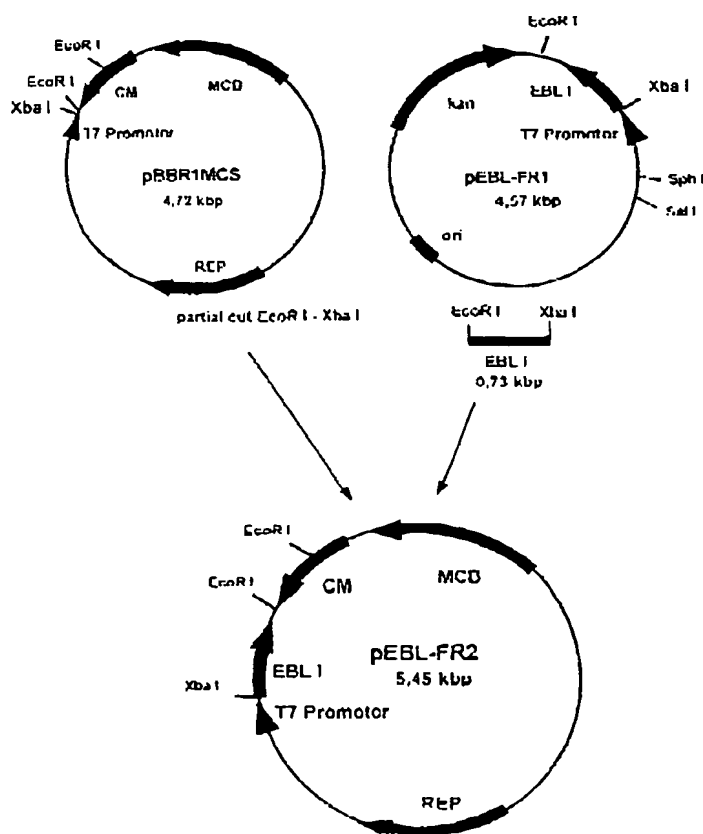
(72) Inventor: TADROS, Monier [DE/DE]; Am Reitzgraben  
58, 79108 Freiburg (DE).(74) Agent: STÜRKEN, Joachim, J. Stürken Patentanwalts-  
gesellschaft mbH, Engesserstr. 4a, 79108 Freiburg (DE).(81) Designated States (national): AH, AG, AI, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CU, CN, CO, CR, CU,CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, GU, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MY, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG,  
SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,  
VN, YU, ZA, ZM, ZW(84) Designated States (regional): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR,  
GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent  
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,  
NE, SN, TD, TG).

Published:

— with international search report

For two letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR THE PRODUCTION OF PROTAMINE

(57) Abstract: The present invention generally relates  
to the fields of genetic engineering and biochemistry.  
In particular, it relates to a novel method for the pro-  
duction of protamine as well as to novel method for the  
production of protamine as well as to novel composi-  
tions containing protamine as active ingredient. Fur-  
thermore, it relates to the use of said compositions for  
killing or inhibiting microbial cells.

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## PCT REQUEST

1027

Original (for SUBMISSION) - printed on 14.06.2002 05:22:56 PM

0	For receiving Office use only	
0-1	International Application No.	
0-2	International Filing Date	
0-3	Name of receiving Office and "PCT International Application"	
0-4	Form - PCT/RO/101 PCT Request	
0-4-1	Prepared using	PCT-EASY Version 2.92 (updated 01.01.2002)
0-5	Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	European Patent Office (EPO) (RO/EP)
0-7	Applicant's or agent's file reference	1027
I	Title of invention	METHOD FOR THE PRODUCTION OF PROTAMINE
II	Applicant	
II-1	This person is:	applicant and inventor
II-2	Applicant for	all designated States
II-4	Name (LAST, First)	TADROS, Monier
II-5	Address.	Am Retzgraben 58 D-79108 Freiburg Germany
II-6	State of nationality	DE
II-7	State of residence	DE
IV-1	Agent or common representative; or address for correspondence The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	agent
IV-1-1	Name (LAST, First)	STURKEN, Joachim
IV-1-2	Address:	J. Stürken Patentanwaltsgesellschaft mbH Engesserstr. 4a D-79108 Freiburg Germany
IV-1-3	Telephone No.	0761/ 5563012
IV-1-4	Facsimile No.	0761/ 5563014
IV-1-5	e-mail	info@patent-gmbh.de

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V	Designation of States	
V-1	Regional Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	<p>AP: GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW and any other State which is a Contracting State of the Harare Protocol and of the PCT</p> <p>EA: AM AZ BY KG KZ MD RU TJ TM and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT</p> <p>EP: AT BE CH&amp;LI CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR and any other State which is a Contracting State of the European Patent Convention and of the PCT</p> <p>OA: BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG and any other State which is a member State of OAPI and a Contracting State of the PCT</p>
V-2	National Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	<p>AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH&amp;LI CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW</p>
V-3	Precautionary Designation Statement In addition to the designations made under items V 1, V-2 and V-3, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V 6 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit	
V-6	Exclusion(s) from precautionary designations	NONE
VI	Priority claim	NONE
VII-1	International Searching Authority Chosen	European Patent Office (EPO) (ISA/EP)

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VIII	<b>Declarations</b>	<b>Number of declarations</b>	
VIII-1	Declaration as to the identity of the inventor	-	
VIII-2	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	-	
VIII-3	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	-	
VIII-4	Declaration of inventorship (only for the purposes of the designation of the United States of America)	-	
VIII-5	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	-	
IX	<b>Check list</b>	<b>number of sheets</b>	<b>electronic file(s) attached</b>
IX-1	Request (including declaration sheets)	4	-
IX-2	Description (excluding sequence listing part)	106	-
IX-3	Claims	11	-
IX-4	Abstract	1	EZABST00.TXT
IX-5	Drawings	4	-
IX-7a	Sub-total number of sheets	126	
IX-6a	Sequence listing part of description filed in computer readable form in addition to being filed in paper form (under Section 801(a)(ii))	18	1 Diskette
IX-7	TOTAL	144	
	<b>Accompanying items</b>	<b>paper document(s) attached</b>	<b>electronic file(s) attached</b>
IX-8	Fee calculation sheet	✓	-
IX-9	Original separate power of attorney	✓	-
IX-16	Sequence listing in computer readable form		
IX-16 (ii)	additional copies including, where applicable, the copy for the purposes of international search under Rule 13ter	-	1 Diskette
IX-17	PCT-EASY diskette	-	Diskette
IX-19	Figure of the drawings which should accompany the abstract	2	
IX-20	Language of filing of the international application	English	
X-1	Signature of applicant, agent or common representative		
X-1-1	Name (LAST, First)	STÜRKEN, Joachim	

## FOR RECEIVING OFFICE USE ONLY

10-1	Date of actual receipt of the purported international application	
10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	

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## PCT REQUEST

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Original (for SUBMISSION) - printed on 14.06.2002 05:22:56 PM

10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/EP
10-6	Transmittal of search copy delayed until search fee is paid	

## FOR INTERNATIONAL BUREAU USE ONLY

11-1	Date of receipt of the record copy by the International Bureau	
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PCT

1027

Original (for SUBMISSION) - printed on 14 06 2002 05.22.56 PM

0-1	Form - PCT/RO/134 (EASY) Indications Relating to Deposited Microorganism(s) or Other Biological Material (PCT Rule 13bis)	
0-1-1	Prepared using	PCT-EASY Version 2.92 (updated 01.01.2002)
0-2	International Application No.	
0-3	Applicant's or agent's file reference	1027

1	The indications made below relate to the deposited microorganism(s) or other biological material referred to in the description on:	
1-1	page	72
1-2	line	2
1-3	Identification of Deposit	
1-3-1	Name of depositary institution	DSMZ-Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH
1-3-2	Address of depositary institution	Mascheroder Weg 1b, D-38124 Braunschweig, Germany
1-3-3	Date of deposit	10 June 2002 (10.06.2002)
1-3-4	Accession Number	DSMZ 15050
1-4	Additional Indications	NONE
1-5	Designated States for Which Indications are Made	all designated States
1-6	Separate Furnishing of Indications	NONE
	These indications will be submitted to the International Bureau later	
2	The indications made below relate to the deposited microorganism(s) or other biological material referred to in the description on:	
2-1	page	72
2-2	line	3
2-3	Identification of Deposit	
2-3-1	Name of depositary institution	DSMZ-Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH
2-3-2	Address of depositary institution	Mascheroder Weg 1b, D-38124 Braunschweig, Germany
2-3-3	Date of deposit	10 June 2002 (10.06.2002)
2-3-4	Accession Number	DSMZ 15051
2-4	Additional Indications	NONE
2-5	Designated States for Which Indications are Made	all designated States
2-6	Separate Furnishing of Indications	NONE
	These indications will be submitted to the International Bureau later	

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1027

Original (für EINREICHUNG) - gedruckt am 14.06.2002 05:36:19 PM

2-6	Gesondert eingereichte Angaben Diese Angaben werden dem Internationalen Büro später übermittelt	KEINE
3	Die nachstehenden Angaben betreffen den Mikroorganismus und/oder anderes biologisches Material, der/das in der Beschreibung genannt ist	
3-1	Seite	72
3-2	Zeile	4
3-3	Angaben betr. Hinterlegung	
3-3-1	Name der Hinterlegungsstelle	DSMZ-Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH
3-3-2	Anschrift der Hinterlegungsstelle	Mascheroder Weg 1b, D-38124 Braunschweig, Germany
3-3-3	Datum der Hinterlegung	12 Juni 2002 (12.06.2002)
3-3-4	Eingangsnummer	DSMZ 15052
3-4	Weitere Angaben	KEINE
3-5	Bestimmungsstaaten, für die besondere Angaben gemacht werden	alle Bestimmungsstaaten
3-6	Gesondert eingereichte Angaben Diese Angaben werden dem Internationalen Büro später übermittelt	KEINE

## VOM ANMELDEAMT AUSZUFÜLLEN

0-4	Dieses Formular ist mit der internationalen Anmeldung eingegangen (ja oder nein)	
0-4-1	Bevollmächtigter Bediensteter	

## VOM INTERNATIONALEN BÜRO AUSZUFÜLLEN

0-5	Dieses Formular ist an folgendem Datum beim internationalen Büro eingegangen	
0-5-1	Bevollmächtigter Bediensteter	

## PATENT COOPERATION TREATY

GBL 7.10.02

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF RECEIPT OF  
RECORD COPY

(PCT Rule 24.2(a))

RA	RECEIVED
SR	02 Okt. 2002
BR	11 Sept. 2002

To:

STÜRKEN, Joachim  
J. Stürken  
Patentanwalts-gesellschaft mbH  
Engesserstr. 4a  
79108 Freiburg  
Germany

Date of mailing (day/month/year) 11 September 2002 (11.09.02)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 1027	International application No. PCT/EP02/06596

The applicant is hereby notified that the International Bureau has received the record copy of the international application as detailed below.

Name(s) of the applicant(s) and State(s) for which they are applicants:

TADROS, Monier (all designated States)

International filing date : 14 June 2002 (14.06.02)

Priority date(s) claimed :

Date of receipt of the record copy  
by the International Bureau : 06 August 2002 (06.08.02)

List of designated Offices :

AP : GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW  
EA : AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
EP : AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR  
OA : BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
National : AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ,  
EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KF, KG, KP, KR, KZ, LC, LI, LR, LT, LU,  
LV, MA, MD, MG, MK, MN, MY, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR,  
TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW

## ATTENTION

The applicant should carefully check the data appearing in this Notification. In case of any discrepancy between these data and the indications in the international application, the applicant should immediately inform the International Bureau.

In addition, the applicant's attention is drawn to the information contained in the Annex, relating to:

- ☒ time limits for entry into the national phase - see updated important information (as of April 2002)
- ☐ confirmation of precautionary designations (if applicable)
- ☐ requirements regarding priority documents (if applicable)

A copy of this Notification is being sent to the receiving Office and to the International Searching Authority

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No. (41 22) 740.14.35

Authorized officer:

Sun LEE

Telephone No. (41-22) 338.83.38



## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>1027</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/EP 02/ 06596</b>	International filing date (day/month/year) <b>14/06/2002</b>	(Earliest) Priority Date (day/month/year)
Applicant <b>TADROS, Monier</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 7 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report

## 1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b))

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☒ contained in the international application in written form.

☐ filed together with the international application in computer readable form

☐ furnished subsequently to this Authority in written form

☒ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished

☒ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☒ Unity of invention is lacking (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 30.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

## 6. The figure of the drawings to be published with the abstract is Figure No.

☒ as suggested by the applicant

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

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☐ None of the figures

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP 02/06596**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos. .  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos. .  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos. .  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

3 and 43 (completely); 1, 2 4-28 and 31-42 (partially)

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

International Application No. PCT/EP 02/06596

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 3 and 43 (completely); 1, 2, 4-28 and 31-42 (partially)

Isolated DNA molecule encoding protamine or functional fragment thereof of SEQ ID No.2, said protamine, plasmid comprising said molecule, host cell transformed with said plasmid, method for transforming a host cell with said plasmid, method for the production of said protamine, bacterial or fungicidal composition comprising said protamine.

2. Claims: 1, 2, 4-28 and 31-42 (partially)

Isolated DNA molecule encoding protamine of SEQ ID No.14, said protamine, plasmid comprising said molecule, host cell transformed with said plasmid, method for transforming a host cell with said plasmid, method for the production of said protamine, bacterial or fungicidal composition comprising said protamine.

3. Claims: 1, 2, 4-28 and 31-42 (partially)

Isolated DNA molecule encoding protamine of SEQ ID No.16, said protamine, plasmid comprising said molecule, host cell transformed with said plasmid, method for transforming a host cell with said plasmid, method for the production of said protamine, bacterial or fungicidal composition comprising said protamine.

4. Claims: 1, 2, 4-28 and 31-42 (partially)

Isolated DNA molecule encoding protamine of SEQ ID No.18, said protamine, plasmid comprising said molecule, host cell transformed with said plasmid, method for transforming a host cell with said plasmid, method for the production of said protamine, bacterial or fungicidal composition comprising said protamine.

5. Claims: 1, 2, 4-28 and 31-42 (partially)

Isolated DNA molecule encoding protamine of SEQ ID No.20, said protamine, plasmid comprising said molecule, host cell transformed with said plasmid, method for transforming a host cell with said plasmid, method for the production of said protamine, bacterial or fungicidal composition comprising said protamine.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

## 6. Claims: 1, 2, 4-28 and 31-42 (partially)

Isolated DNA molecule encoding protamine of SEQ ID No.22, said protamine, plasmid comprising said molecule, host cell transformed with said plasmid, method for transforming a host cell with said plasmid, method for the production of said protamine, bacterial or fungicidal composition comprising said protamine.

## 7. Claims: 1, 2, 4-28 and 31-42 (partially)

Isolated DNA molecule encoding protamine of SEQ ID No.24, said protamine, plasmid comprising said molecule, host cell transformed with said plasmid, method for transforming a host cell with said plasmid, method for the production of said protamine, bacterial or fungicidal composition comprising said protamine.

## 8. Claims: 1, 2, 4-28 and 31-42 (partially)

Isolated DNA molecule encoding protamine of SEQ ID No.26, said protamine, plasmid comprising said molecule, host cell transformed with said plasmid, method for transforming a host cell with said plasmid, method for the production of said protamine, bacterial or fungicidal composition comprising said protamine.

## 9. Claims: 29 and 30 (completely); 34-36, 38-40 and 42 (partially)

Bacteriocidal, bacteriostatic, fungicidal and/or fungistatic composition comprising or consisting essentially of citrate and bicarbonate.

Internal Application No  
PCI/EP 02/06596

According to International Patent Classification (IPC) or to both national classification and IPC:

## R FIELDS SEARCHED

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, EMBASE, BIOSIS, SEQUENCE SEARCH

C. DOCUMENT IS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	DATABASE SWISSPROT [Online] 21 July 1986 (1986-07-21) Database accession no. P02327 XP002237844 the whole document	1,2,10, 43
X	JOHANSEN C ET AL: "Protamine-Induced Permeabilization of Cell Envelopes of Gram-Positive and Gram-Negative Bacteria" J. APPLIED AND ENVIRONMENTAL MICROBIOLOGY, VOL. 63, NR. 3, PAGE(S) 1155-1159, 1997 XP001147022 ISBN: 0099-2240 abstract page 1155, column 1	31-43

☒ Further documents are listed in the continuation of Box C.

☒ Parent family members are listed as annex.

<sup>2</sup> Special categories of cited documents

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "B" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but related to understand the principle or theory underlying the invention
- "X" document of particular relevance: the claimed invention cannot be considered novel in cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "Z" document member of the same patent family

Date of the actual completion of the international search

18 June 2003

Date of mailing of the international search report

27.03.03

Name and mailing address of the ISA

European Patent Office, P.O. Box 5010 Patentlaan 2  
NL 2280 HV Rijswijk  
Tel (+31-70) 340 2040, fx 31 651 epo nl.  
Fax (+31-70) 340-3016

Authorized officer \_\_\_\_\_

Chavanne, F

## INTERNATIONAL SEARCH REPORT

International Application No.

PCT/EP 02/06596

## C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KAMAL M ET AL: "Inhibitory Effects of Salmine Sulfate on the Growth of Molds" , BULLETIN OF THE JAPANESE SOCIETY OF SCIENTIFIC FISHERIES, VOL. 52, NR. 6, PAGE(S) 1061-1064 XP009009126 ISSN: 0021-5392 abstract page 1061, column 2, paragraph 2 -----	31-42
X	WO 00 55196 A (BYRN YOUNGRO ;UNIV MICHIGAN (US); YANG VICTOR C (US)) 21 September 2000 (2000-09-21) abstract page 5, line 18 - line 26 page 24, line 24 page 27, line 9 -page 36, line 2 example 1 -----	43

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 02/06596

Patent document  
cited in search reportPublication  
datePatent family  
member(s)Publication  
date

WO 0055196

A

21-09-2000

AU  
WO3887900 A  
0055196 A104-10-2000  
21-09-2000

## PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

**PCT**NOTICE INFORMING THE APPLICANT OF THE  
COMMUNICATION OF THE INTERNATIONAL  
APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

To:

STÜRKEN, Joachim  
J. Stürken Patentanwalts-Gesellschaft mbH  
Engesserstr. 4a  
79108 Freiburg  
ALLEMAGNEDate of mailing (day/month/year)  
24 December 2003 (24.12.03)Applicant's or agent's file reference  
1027

## IMPORTANT NOTICE

International application No.  
PCT/EP02/06596International filing date (day/month/year)  
14 June 2002 (14.06.02)

Priority date (day/month/year)

Applicant

TADROS, Monier

1. Notice is hereby given that the International Bureau has **communicated**, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this notice:

AU, AZ, BY, CH, CN, CO, DE, DZ, EP, HU, JP, KG, KP, KR, MD, MK, MZ, RU, TM, US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

AE, AG, AL, AM, AP, AT, BA, BB, BG, BR, BZ, CA, CR, CU, CZ, DK, DM, FA, EG, EE, ES, FI, GB, GD, GE, GH, GM, HR, ID, IL, IN, IS, KF, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MG, MN, MW, MX, NO, NZ, OA, OM, PH, PL, PT, RO, SD, SE, SG, SI, SK, SL, TJ, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this notice is a copy of the international application as published by the International Bureau on 24 December 2003 (24.12.03) under No. WO 03/106485

4. **TIME LIMITS** for filing a demand for international preliminary examination and for entry into the national phase

The applicable time limit for entering the national phase will, subject to what is said in the following paragraph, be **30 MONTHS** from the priority date, not only in respect of any elected Office if a demand for international preliminary examination is filed before the expiration of 19 months from the priority date, but also in respect of any designated Office, in the absence of filing of such demand, where Article 22(1) as modified with effect from 1 April 2002 applies in respect of that designated Office. For further details, see *PCT Gazette* No. 44/2001 of 1 November 2001, pages 19926, 19932 and 19933, as well as the *PCT Newsletter* (October and November 2001 and February 2002 issues).

In practice, time limits other than the 30-month time limit will continue to apply, for various periods of time, in respect of certain designated or elected Offices. For regular updates on the applicable time limits (20, 21, 30 or 31 months, or other time limits, Office by Office, refer to the *PCT Gazette*, the *PCT Newsletter* and the *PCT Applicant's Guide*, Volume II, National Chapters, all available from WIPO's Internet site, at <http://www.wipo.int/pct/en/index.html>.

For filing a demand for international preliminary examination, see the *PCT Applicant's Guide*, Volume I/A, Chapter IX. Only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination (at present, all PCT Contracting States are bound by Chapter II).

It is the applicant's sole responsibility to monitor all these time limits.

The International Bureau of WIPO  
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1211 Geneva 20, Switzerland

Authorized officer:

Judith Zahra

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